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1835





LECTURE

INTRODUCTORY TO THE COURSE OF

MATERIA MEDICA AND PHARMACY,

IN THE

UNIVERSITY OF PENNSYLVANIA,

FOR THE SESSION OF 1835-6.

BY GEORGE B. WOOD, M. D.

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PUBLISHED BY THE MEMBERS OF THE CLASS.

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Philadelphia, November 9, 1835.

DOCT. G. B. WOOD,

SIR:

At a meeting of the Medical Class of the University of Pennsylvania, it was unanimously resolved, that a copy of your eloquent and instructive introductory address be requested for publication.

The undersigned, a committee appointed for that purpose, tender you this request, hoping it will meet with your acquiescence, and at the same time assure you of their individual esteem and respect.

Yours, &c.

WILLIAM ELMER, JR.

WM. B. CASEY,

H. S. PATTERSON,

WM. HOPE,

ALEXR. VAN RENSSSELLAER,

WILLIAM YOUNG.



Philadelphia, Nov. 10, 1835.

Messrs. W. Elmer, jr. W. B. Casey, H. S. Patterson, Wm. }
Young, Wm. Hope, and Alexr. Van Renssellaer. }

GENTLEMEN:—

Your communication on the part of the Medical Class of the University of Pennsylvania is most gratifying to me, as an evidence of their kind feelings; and I cannot decline the request which it conveys, however much I may be convinced, that the merits of the address exist only in their partial opinion.

Please accept for yourselves, and convey to the Class, the assurance of my most cordial regard and affection.

Sincerely your friend,

GEO: B. WOOD.



INTRODUCTORY LECTURE.

GENTLEMEN—

IT is with emotions of no ordinary nature that I appear before you. Though long in the habit of public teaching, I now stand, in some measure, upon untried ground. It has not hitherto been my lot to address an audience whose favorable opinion was so important, nor to speak from a station whence so much was expected. My position, moreover, challenges for me a hazardous comparison with *colleagues*, whose great merits are well known to you all, and with *predecessors*, the memory of whose splendid talents still lingers like a glorious halo about these walls. I shall be excused, therefore, if I feel strongly at this moment; and may, perhaps, be justified in asking from you some indulgence, if, in the agitations of so interesting an occasion, I shall fail to satisfy the wishes of my friends.

You are aware that I have been chosen to teach *Materia Medica* in this Institution. The first duty incident to the charge, is to introduce the subject to your notice, and to recommend it to your favor. For this purpose, I now address you. It is scarcely necessary for me to state, that *Materia Medica* is the science which treats of the history, properties, and relations of medicinal substances. Its origin must have been nearly coeval with that of disease. Pain seeks for relief no less than hunger for satisfaction; and the same combination of instinct and reason which discovers food for health, finds also medicine for sickness. No tribe of men is so savage and destitute as not to possess its list of remedies. But, in his igno-

rance of the laws of external nature, and of those which regulate his own system, the uncultivated man not unfrequently ascribes the cures he may have experienced or observed to wrong causes; and, in the apparent absence of any physical agent, often spares himself the trouble of investigation by an easy resort to the intervention of supernatural influences. Hence the *Materia Medica* of a people advanced beyond the lowest grades of barbarism is apt to be loaded with superfluities, and deformed by superstition; and in this state was the science at the date of its earliest records among the ancients.

Little remains to us of all that was written on the subject of medicines before the time of Celsus. This author, who lived in the first century of our era, and is celebrated as the most classical of the Latin medical writers, enumerates most of the substances then employed as remedies, and gives the ingredients of various compound preparations; but his notices are meagre, and, in general, simply therapeutical, and convey no accurate knowledge of the substances mentioned. The first work especially devoted to the subject of medicines was that of Scribonius Largus, written during the reign of the Emperor Claudius. It is the oldest *Pharmacopœia* extant, and presents the most precise information in our possession of the modes of preparing medicines then in vogue. After Scribonius, followed successively Dioscorides, Pliny, and Galen, of whom the first and the last may be considered as the most celebrated writers upon medicines in ancient times. Galen, particularly, obtained a reputation and authority which have, perhaps, been unequalled in the history of the medical art. His dogmas speedily gained general credit from the ignorance of the age; and for the space of fifteen hundred years, his writings were almost unanimously recognised as a kind of medical Gospel, which it was heresy to dispute. He flourished in the second century, and was the last author upon the subject of medicines, particularly worthy of notice, among the ancient Greeks and Romans.

At no period of antiquity had the science of *Materia Medica* advanced beyond the mere rudiments. The catalogue of medicines was numerous, but abounded in superfluities, introduced either upon false experience or absurd theoretical opinions. Thus, resemblances or analogies in colour, shape, or other sensible property, between the medicine and certain parts of the body or certain products of disease, were supposed to have an important bearing upon its curative powers; and a mysterious influence naturally existing, or imparted by incantations or other supernatural agency, was believed to be possessed by various substances, which were worn as amulets about the body. Objects calculated to inspire disgust, fear, or horror, were thought to extend over the frame the same spells in which they held the spirit; and hence toads, reptiles, venomous insects, and even human bones received a place in the *Materia Medica*. Many of these absurdities, though long since banished from the schools, have found a refuge among the vulgar, even in the most polished nations, and, in various semi-civilized countries of the old continent, flourish in almost their pristine vigour. To most of us it may appear strange, that men of the least cultivation should ever have yielded to such absurd claims upon their faith; but no stretch of credulity seems too great for an intellect not carefully instructed in fundamental truths; and when we witness, among our own contemporaries, such extravagances as a belief in the almost universal virtues of a secret panacea on the one hand, and in the powerful efficacy of the trillionth of a grain of silex on the other, our wonder is directed away from the peculiar folly of the ancients, to the general weakness and fallibility of the human intellect.

Abounding as the ancient *Materia Medica* did in superfluities, it was greatly deficient in remedies of real importance. Many of our most valuable vegetable medicines had not been discovered; very few from the mineral kingdom were used internally, and the whole circle of chemicals, now

among the most efficient employed, was quite unknown. Pharmacy, or the art of preparing medicines for use, was not less imperfect, embracing only a few simple and uncertain processes directed to the preparation of external remedies, or of those compounds the chief recommendation of which was in the vast number of their ingredients.

But crude and imperfect as was the knowledge of *Materia Medica* possessed by the ancients, it was certainly preferable to that savage ignorance of this, as of all other sciences, which spread over Europe after the subversion of the Western Empire. For many ages, almost the whole continent remained submerged in a deluge of barbarism, with only here and there floating fragments of civilization, or isolated ruins rising out of the darkness to show what had before existed. The Arabians, who conquered the Asiatic and African provinces of the Eastern Empire, and established upon its ruins the throne of the caliphs, as they were originally less barbarous than the hordes of Germany and Scandinavia, were better prepared to adopt the learning, science, and arts of the conquered people. The writings of the Greeks were zealously studied, and their facts and opinions appropriated with an avidity little short of that which had led to the usurpation of their dominions. Bagdad became the seat as well of science as of Empire in the East. Medicine was cultivated with peculiar care; and the fame of not a few Arabian writers still endures, who treated with various merit upon the subjects of *Materia Medica* and Pharmacy. But with the merits of Grecian medicine, its errors, follies, and absurdities were also adopted; and to the present time, in some Mahomedan countries of the East, the doctrines of Galen are admitted as implicitly as in the days of their greatest glory. The credit of the Arabians is not confined to the mere preservation of the knowledge of the ancients. They made considerable additions to the remedies before known, introduced various new processes, prepared the way for the effectual application of chemistry to the Pharmaceutical

art, and laid the foundation of that distinction between the professions of Medicine and Pharmacy which has subsequently tended so much to the advantage of both.

With the lust of conquest, the Arabians carried with them the spirit of improvement also into the West of Europe; and their dominions in Spain became as distinguished for the cultivation of all the sciences of the age as their earlier Empire in the East. This enlightened spirit spread even beyond their boundaries into the dark barbarism of the North, which their arms were unable to penetrate. Medicine was among the sciences which now returned to Europe from their long exile. Schools were established, a collection of works upon medicines was published, and practical Pharmacy began to take root in the more civilized portions of the continent.

It may be readily conceived, however, that both *Materia Medica* and Pharmacy were in a most imperfect state. Life had been breathed into them, and the embryo began to evince the organizing movements which were going on within it; but the soil in which it had been planted was yet too sterile to afford the food requisite for its rapid or perfect development. It was under these circumstances, that the conquest of Constantinople by the Turks, about the middle of the fifteenth century, opened the sources of a fertilizing flood, which gradually spread over Europe, and brought the languishing germs into energetic and productive action. The exiled Greeks carried into Italy the stores of ancient learning which had for centuries been locked up in the Eastern capital, and by teaching their language afforded a key which rendered these stores accessible. The spirit which had been awakened by the Arabians, thus found abundant materials for the employment of its plastic energies. The recent discovery of the art of printing, came happily in aid of the impulse imparted to the human intellect. Gifted with wings which never wearied, knowledge, in a thousand forms, flew hither and thither over Europe, bearing into distant regions the riches of favoured

spots without exhausting these, gathering every where in order every where to diffuse, and directing the energies of a whole continent into one united effort for improvement. Immense effects could not but result from such a movement. An impulse was given to the human mind, which has been propagated with almost constantly increasing vigour to the present times, producing in every age fruits which have astonished while they benefitted the world, and promising to go on shedding its blessings throughout the indefinite future.

But with the knowledge of the ancients were revived all their follies and extravagancies. The intellect had remained too long inactive to be able to distinguish truth from the mass of error with which it was mingled, and the aroused appetite was too keen to reject even the husks and offal which were presented to it along with more wholesome nutriment. But the *Materia Medica* of the fifteenth century excelled that of the Greeks and Romans in the accessions which it had received from the Arabians, and in those which began to accrue from chemical research. The labours of the Alchemysts added greatly to its resources. At first sight, it may appear incomprehensible that sagacious men should ever have engaged in that wild search after miraculous energies in the products of nature. But the human mind had been subjected to no discipline. Awakened from a long sleep, it beheld an infinity of objects moving before it, and dazzled by the unwonted splendour, could not at once trace that secret cord which bound the apparent confusion in a beautiful system of order. No wonder that some of the wild dreams which had been flitting past it for centuries, should, in the first moments of aroused consciousness, still cling to its recollections with the force of realities. The two strongest emotions of the human breast—the love of life and the lust of power—co-operated with the weakness of an unexercised intellect to blind the judgment to the truth. The hope of living for a thousand years, and of possessing wealth and consequently power beyond the

reach of human conception, was too dear to the heart to yield to the feeble contradiction of a weak and bewildered reason. The elixir of life and the philosopher's stone, which were to be the instruments of gratification to these lofty wishes, did not seem to be impossibilities in a world, where nothing was known to be impossible which did not involve a contradiction. The zeal therefore, which sought these creatures of the imagination through every region of nature is not in fact, surprising. It was amply repaid both in its failure and its successes; for the objects longed for, would, if attained, have proved a curse to mankind, while the numerous discoveries made in the progress of the search have proved a blessing. In digging for gold, the Alchemists, though they failed to find the metal, prepared the soil for the production of a more useful harvest. The resources of the medical art were greatly extended by their labours; and some of the most efficient instruments now employed in the treatment of diseases, had their origin at this period. The introduction of the antimonials and mercurials into the *Materia Medica* was an event which alone would illustrate an age.

The maritime discoveries of that eventful era contributed also greatly to enrich this department of medicine. Several new and highly important remedies were introduced into Europe from the new continent, and those derived from India, particularly the spices, became more abundant in consequence of their cheaper carriage by the southern passage.

Up to the close of the seventeenth century, we may consider that the process of accumulation, in relation to medicines, was steadily going on; and that, though some enlightened spirits had escaped from the bondage of authority and superstition, the great majority still adhered to the absurdities of past ages; and the *Materia Medica*, with its new accessions, retained most of its former vices and superfluities. At length, however, that intellectual craving which had followed the inanition of a thousand years appeared to be appeased. The squeamishness

of satiety succeeded; and asserted facts as well as doctrines began to undergo a closer scrutiny before they could be admitted. The process of digestion had commenced; and the judgment was too much occupied with the selection and appropriation of the solid and nutritious matter, to receive with complacence the same kind of heterogeneous mixture which had hitherto satisfied the taste. The philosophy of Bacon, which rejected all theory not based upon and supported by facts, and admitted nothing as fact except upon positive evidence, began to be received as the only legitimate guide in the search after truth. Under the influence of these principles, antiquity ceased to be venerable; and imagination was banished from science into poetry. An immense mass of rubbish, the accumulation of all preceding ages, was washed away in the operation of experimental inquiry; and the particles of pure gold which had weight enough to withstand the current, remained to reward the labors of the search. Magic, and astral influence, and all the host of imaginary powers which dwell in the strange, the disgusting, and the horrible, fled with ghosts and fairies before the new day which broke upon the human intellect. The removal of the weeds and rubbish which had choked the sprouting sciences, now left a clear field for their growth. Botany sprang rapidly from its embryo state into a flourishing existence; and, in the accessions which it afforded to the *Materia Medica*, and the greater precision which it introduced into this branch of medicine, bore fruit sufficient to prove that it was not a mere ornament in the garden of knowledge. But it was from the wonderful improvements in Chemistry during the last century, particularly towards its close, that *Materia Medica* and Pharmacy experienced the greatest benefit. Not only were new and valuable medicinal compounds produced, but those already in use were rendered purer, and therefore more uniform in their action; the processes for the preparation of medicines were simplified, and brought under the direction of precise rules; certain principles

were established by which the pharmacist might conduct safely the numerous operations which could not be made the subjects of officinal formulæ; and a spirit was, to a certain extent, subjected to his commands, which, pervading all nature, and ruling every secret movement of unorganized bodies, became a powerful instrument in his hands for the purposes of improvement or discovery. Since the commencement of the present century, the advantages from this source have been constantly on the increase; and the discovery of the vegetable alkalies, and other active principles of medicinal plants, and of the modes of extracting them, will probably be considered hereafter as the foundation of a new era in our science.

I have thus presented you with a rapid and imperfect sketch of the origin and growth of that branch of medicine which it has become my duty to teach. It would afford me much pleasure to do justice to the numerous individuals, who by their writings or discoveries have contributed to its present flourishing state, especially those of our own country, and of this particular school, who have illustrated the subject of the *American Materia Medica*. But from this gratification I am precluded by the narrow limits assigned to a discourse like the present, and must content myself with referring you to my future lectures, in which the opportunity will be offered of giving to each individual due credit, in connexion with the particular improvement or discovery which may constitute his claim to distinction. At present it is more important that I should endeavor to impress you with a conviction of the great value of the *Materia Medica*, and thereby afford you the strongest inducement for entering zealously upon its pursuit. This is the more necessary, as the science of late has been somewhat undervalued. The current of medical partiality appears to have set strongly into the channel of Pathology. The successful cultivation of this science in France, the distinction attained by some of those who have prosecuted it

most diligently, and the warm and contagious zeal which characterizes their writings, have kindled the emulation of some of our ardent countrymen, whose enthusiastic convictions and impassioned eloquence have worked their usual effects among the young devotees of medicine. Attention has thus been diverted, in some measure, from the *Materia Medica*, and the effect has been greater, as the tendency of the doctrines inculcated is to produce an impression, that comparatively few remedial agents are necessary in the treatment of disease.

No error is greater than that which would limit the *Materia Medica* within a very narrow compass. It is true that the *general* indications for the use of medicines are not numerous, and may therefore be answered by a few remedies. But there are countless varieties in the circumstances of disease, dependent on the degree, peculiar nature, and complications of the morbid action, and on the habits, tastes, and dispositions of the patient, which modify the main indication, and consequently require some modification in the character of the remedy proposed. To meet these diversified calls of disease, nature has provided an equal diversity of means; and he who neglects to avail himself of the advantages thus afforded him, is guilty of injustice alike to his patient and himself. Let us suppose, for example, that, in a number of cases presenting different aspects, there may exist a coincident indication for the use of a cathartic. It is not allowable for the physician to meet this indication, in every instance, by the use of the same medicine. On the contrary, it is his duty to observe the peculiarities of each case, and endeavor to select the particular cathartic applicable to these peculiarities. Thus, if the symptoms requiring the use of purgative medicine be complicated with acidity of stomach, he will employ magnesia; if with hepatic derangement, calomel; if with general debility, rhubarb; if with febrile excitement, one of the neutral salts; and so on through a long catalogue of cathartics. The same

remark is applicable to other classes of the *Materia Medica*; and it will be at once perceived, that, upon these grounds, the number of medicines at the command of the physician can scarcely be too great, provided they possess the requisites of activity and diversity of power.

But in order that the practitioner may be able to select the remedy applicable to any particular case, it is obvious that he must be acquainted not only with the general character, but also with the minute peculiarities of the whole circle of medicines. It is not sufficient for him to possess an accurate knowledge of the seat of the *disease*, just views of its nature, and a clear insight into the indications for its treatment. All these will avail him little, unless he is at the same time enabled, from his familiarity with the properties of medicines, to select that which is calculated to answer the indications presented. He who neglects the study of *Materia Medica*, under the impression that it is inferior in importance to those branches of medicine which have a more immediate reference to affections of the system, may become a profound physiologist or pathologist, but will be an inferior practitioner; and it has been observed of those who have devoted themselves with a partial zeal to the study of disease, that they are not always the most successful in its treatment.

But a knowledge of the remediate powers of medicines is not all that is necessary. The physician should also be acquainted with their characteristic sensible properties, in order that he may recognise them when placed before him; with the signs of their purity and efficiency, that he may avoid imposition in their purchase; with their various chemical characters and relations, that he may escape the disappointment which must result from the joint use of incompatible substances; finally, with the modes of most advantageously combining and preparing them, that he may avail himself of every modification in nature and form, which the palate or stomach of the patient, or the peculiarity of his disease may demand. They

who give due weight to these considerations will, I am convinced, join me in the sentiment, that the study of *Materia Medica* cannot be deemed of little importance, or postponed, with impunity, to that of any other branch of medical science.

I am fully aware, that when speaking of a favorite pursuit, especially when attempting to recommend it to the attention and affections of others, it is difficult for the lecturer to avoid what may seem to the audience a tone of exaggeration. Perhaps I may be guilty of this fault in stating my impression, that, in addition to the claims which may be urged for the *Materia Medica*, on the score of importance, to a high station among the medical sciences, it possesses, when properly taught, a degree of interest to an inquiring mind, which might compensate for some deficiency in real value. It must be admitted that the study of medicines is considered by many as dry and forbidding; and is therefore entered on with reluctance, and, after the attainment of a superficial knowledge, abandoned with pleasure. Perhaps, however, this is as much the fault of the mode of instruction as of the subject itself. *Materia Medica* is, to a certain extent, a demonstrative science. The student who merely reads or hears a description of certain medicines, without having them before him, can form no definite or satisfactory notion of their sensible properties, and finds great difficulty in properly discriminating them in his own mind. Upon hearing the name of some one of them mentioned, he may remember that it is cathartic, or diuretic, or diaphoretic, that it produces particular effects upon the system, and is administered in certain states of disease; but he has rather the description before him than the object itself, of which he has no picture in his memory. His recollections are uncertain and indistinct, as they are not aided by any impressions on his senses, nor any vivid associations. But if, as in other demonstrative sciences, the object be presented to him, so that he may test by the evidence of the sight, and taste, and touch, the accuracy with which it is described, and make

himself familiar with all its obvious characters, he will soon feel himself on the footing of an acquaintance, and will experience a curiosity to know it more intimately, to learn its history and external relations, precisely as we all take a much greater interest in the affairs of an individual whom we have personally met with, than of one who is known to us only by reputation. The *Materia Medica*, therefore, should always be studied and taught with the individual medicines before the student; and this not only in their entire state and ordinary form, but in all the varieties in which they are found in the market, and in all the states of preparation to which they are officinally brought.

Other sources of interest exist from which the teacher may draw liberally without diminishing the value of his instruction. A continuous detail of facts, which, from the necessity for their remembrance, demand close attention, often becomes excessively fatiguing by keeping the mind constantly on the stretch. In the *Materia Medica*, frequent opportunities are offered of intermingling with the description of the medicine narratives of its original discovery and therapeutical application, and various circumstances with regard to the plant producing it, the mode of its collection, and its commercial history, which, as they are not essentially important, allow of some relaxation of the attention, and thus refresh and invigorate the mind for new efforts. Nor can the impression which such narratives may leave on the memory of the student be considered as altogether unprofitable. They do not enable him to cure disease with greater facility; but they augment his fund of pleasing reflection by connecting with the substances which come under his daily notice a numerous train of associations, afford him the means of appearing to greater advantage in social intercourse by increasing his conversational resources, and give that kind of pleasing relief, in the eyes of the world, to the solidity of his professional knowledge, which the

column in Grecian architecture receives from the ornaments about its capital.

It is a great mistake to suppose, that no other knowledge is requisite for the accomplished physician than that which is essential to the mere physical management of disease. In any pursuit or business whatever, an exclusive devotion to one train of thought, has the effect of narrowing and cramping the character, of incapacitating for liberal and impartial views of the relative importance and mutual benefit of the various occupations of social life, and of producing not unfrequently a ludicrous pedantry or offensive contemptuousness of manner, that tend very considerably to restrict the limits, within which any peculiar skill derived from such exclusiveness of devotion can have the opportunity of displaying itself. To our profession the warning suggested by this remark is especially applicable. We may be said to live upon opinion. In most other occupations confidence in superior skill will go far towards counteracting the influence of repulsive traits of character and manner; but the physician comes so often into contact with those who employ him, enters intimately into all their privacies of feeling, opinion, and social connexion, is so blended in the mind of the patient and his friends with their hopes and fears, joys and regrets, that the conviction of his supremacy in skill must be absolute, and the supposed necessity for his interference extreme, before persons to whom his character and manners are repulsive, can be induced to place themselves in his hands. It behoves us, therefore, to cultivate all those kinds of knowledge which can enlarge, liberalize, and adorn our minds; giving, however, a due preference to such as is more especially requisite to qualify us for the practice of our art, and taking care that the tracery which we throw around the structure of our professional knowledge be not so abundant, nor so improperly arranged, as to conceal the main edifice from the public eye.

Harmony in intellectual attainment is always desirable. An individual who seeks the public patronage in a certain line of occupation, should endeavour, in the acquisition of knowledge not strictly connected with his duties, so to shape his studies as to maintain some relation between them and his chief pursuit; so that his literary or scientific culture may not appear too glaringly contrasted with his profession.

Applying these remarks to the *Materia Medica*, we shall be prepared to admit, that the species of knowledge before alluded to as appropriately occupying a portion of the lecturer's attention, is not only admissible as a relief from the more essential and laborious parts of the study, but is positively useful to the learner by the influence which it contributes, with other analogous information, to exert upon the character of his mind, his social standing, and even his professional reputation.

From what has been said, the scheme which I propose to adopt in the ensuing lectures, may be readily inferred. My first object will be to convey to you all the essential information upon the subject of medicines in as clear and succinct a manner as possible. With the dry scientific details I shall attempt to interweave such descriptions, narratives, and anecdotes, as may appear entirely relevant, and at the same time calculated to set off the more substantial matter of the course. I propose to exhibit specimens of every medicine which will engage your attention, in all its attainable varieties and forms of preparation; to present in painted figures, the most accurate representation of the medicinal plants which it will be in my power to procure; and, in relation to those of American growth, to offer to your inspection dried specimens of the plants themselves, so far as I have hitherto been able to collect them.

Animated as well by zeal for the advancement of the science which I have been appointed to teach, as by an anxious desire to

justify those favourable sentiments which have placed me in my present position, I enter upon my new duties with a determination to spare no pains in their performance. But, gentlemen, I am young as a teacher in this school, and feel the need of kindness and encouragement. Resolved to perform my engagements towards you to the utmost of my ability, may I not expect, in return, from your sense of justice, a considerate attention, and a disposition to judge favourably of my efforts? But I confess that this is not all that I wish. Something more between us is necessary to satisfy me than a cold reciprocity of duty and respect. Gentlemen, I desire, and I ask for your affection. Your esteem I can obtain only by deserving it:—I demand your hearts in return for my own. My feelings go forth towards you as to younger brothers. You will not let them return cold and cheerless to my own bosom. No!—I can perceive in imagination, the dove approaching with the olive leaf in her mouth. I feel that we are friends. I am sure that we shall enter together into the field of labour, with a disposition to cordial co-operation; nor do I doubt, that, if health favour our efforts, we shall gather a rich harvest of profit and gratification.





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